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## What is claimed is:

- 1. An expression vector enc ding a CD4-gamma2 chimeric heavy chain homodimer designated CD4-IgG2-pcDNA1 (ATCC No. 40952).
- A CD4-gamma2 chimeric heavy chain homodimer encoded
   by the expression vector φf claim 1.
  - 3. A method of producing a CD4-gamma2 chimeric heavy chain homodimer which comprises:
    - a) transfecting a mammalian cell with the expression vector of claim 1;
    - b) culturing the resulting transfected mammalian cell under conditions such that chimeric heavy chain homodimer is produced; and
    - c) recovering the chimeric heavy chain homodimer so produced.
- A method of claim 3, wherein the mammalian cell is a COS cell, CHO cell or myeloma cell.
  - A method of inhibiting HIV infection of a CD4+ cell which comprises treating the CD4+ cell with an amount of the CD4-gamma2 chimeric heavy chain homodimer of claim 2 effective to inhibit infection of the cell.
- A method of preventing a subject from being infected with HIV which comprises administering to the subject an amount of the CD4-gamma2 chimeric heavy chain homodimer of claim 2 effective to prevent the subject from being infected with HIV.

as to block the spread of HIV infection which comprises administering to the subject an amount of the CD4-gamma2 chimeric heavy chain homodimer of claim 2 effective to block the spread of HIV infection.

8. A pharmaceutical composition which comprises the CD4-gamma2 chimeric heavy chain homodimer of claim

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A pharmaceutical composition which comprises the CD4-gamma2 chimeric heavy chain homodimer of claim 2 in an amount effective to inhibit HIV infection of a CD4+ cell and a pharmaceutically acceptable carrier.

A method of treating a subject inf ct d with HIV so

- 9. A composition of matter comprising a CD4-gamma2-chimeric heavy chain homodimer of claim 2 and a toxin linked thereto.
- 10. A composition of claim 9, wherein the toxin is the deglycosylated A chain of ricin, domains II or III of Pseudomonas exotoxin A, or Diphtheria toxin.
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  11. A diagnostic reagent comprising a CD4-gamma2 chimeric heavy chain homodimer of claim 2 and a detectable marker linked thereto.
- 12. A diagnostic reagent of claim 11 wherein the detectable marker is a radioisotope, chromophore, or fluorophore.
- 13. An expression vector encoding the heavy chains of a CD4-IgG2 chimeric heterotetramer designated CD4-30 IgG2HC-pRCCMV (ATCC No. 75193).
  - 14. An expression vector encoding the light chains of a CD4-IgG2 chimeric heterotetramer designated CD4-kLC-pRcCMV (ATCC No. 75194).

- 15. A CD4-IgG2 chim ric heterotetramer, the heavy chains of which ar encoded by the xpr ssion vector of claim 13.
- 16. A CD4-IgG2 chimeric heterotetramer, the light chains of which are encoded by the expression vector of claim 14.
- 17. A CD4-IgG2 chimeric heterotetramer the heavy and the light chains of which are encoded by the expression vectors of claims 13 (and) 14, respectively.
- 18. A method of producing a CD4-IgG2 chimeric heterotetramer which comprises:
  - a) cotransfecting a mammalian cell with the expression vector of claim 13 and an expression vector encoding a light chain;
  - b) culturing the resulting cotransfected mammalian cell under conditions such that the CD4-IgG2 chimeric heterotetramer is produced; and
  - c) recovering / the CD4-IgG2 chimeric heterotetramer so produced.
- 19. A method of producing an CD4-IgG2 chimeric heterotetramer which comprises:
  - a) cotransfecting a mammalian cell with the expression vector of claim 14 and an expression vector encoding an IgG2 heavy chain and;

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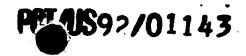
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- b) culturing th resulting cotransf cted mammalian c 11 under conditions such that the chimeric heterotetramer is produced; and
- c) recovering the chimeric heterotetramer so produced.
- 20. A method of producing a CD4-IgG2 chimeric heterotetramer which comprises:
  - a) cotransfecting a mammalian cell with the expression vectors of claim 13 and 14;
  - b) culturing the resulting cotransfected mammalian cell under conditions such that the chimeric heterotetramer is produced; and
  - c) recovering the chimeric heterotetramer so produced.
- 21. A method of claim 18, 19 or 20, wherein the mammalian cell is a COS cell, CHO cell or myeloma cell.
- 22. A method of inhibiting HTV infection of a CD4+ cell which comprises treating the CD4+ cell with an amount of the CD4-IgG2 chimeric heterotetramer of claim 15, 16 or 17 effective to inhibit infection of the cell.
- 23. A method of preventing a subject from being infected with HIV which comprises administering to the subject an amount of the CD4-IgG2 chimeric heterotetramer of claim 15, 16 or 17 eff ctive to prevent the subject from being infected with HIV.

- A method of tr ating a subj ct infected with HIV so as to block the spread of HIV inf ction which comprises administering to the subject an amount of CD4-IgG2 chimeric heterotetramer of claim 15, 16 or 17 effective to block spread of HIV infection.
- 25. A pharmaceutical composition which comprises the CD4-IgG2 chimeric heterotetramer of claim 15, 16 or 17 in an amount effective to inhibit HIV infection of a CD4+ cell and a pharmaceutically acceptable carrier.
  - 26. A composition of matter comprising a CD4-IgG2 chimeric heterotetramer of claim 15, 16 or 17 and a toxin linked thereto.
- A composition of claim 26, wherein the toxin is the deglycosylated A chain of ricin, domains II or III of Pseudomonas exotoxin A, and Diphtheria toxin.
- 28. A diagnostic reagent comprising a CD4-IgG2 chimeric heterotetramer of claim 15, 16 or 17 and a detectable marker linked thereto.
- 29. A diagnostic reagent of claim 28 wherein the detectable marker is a radioisotope, chromophore or fluorophore.

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